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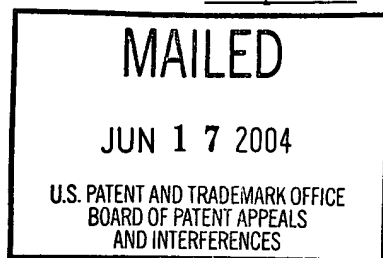
The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

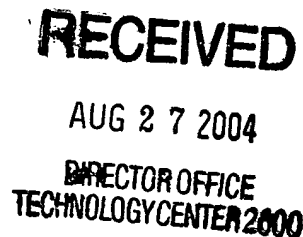
BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JONATHAN D. ALBERT, BARRETT COMISKEY and
JOSEPH M. JACOBSON



Appeal No. 2003-0784
Application No. 09/140,862

ON BRIEF



Before WARREN, WALTZ, and KRATZ, Administrative Patent Judges.
WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's non-final rejection of claims 1 through 9.¹ Although this appeal is not from a final rejection, we have jurisdiction under 35 U.S.C. § 134 since the claims on appeal have been "twice rejected." We refer to the examiner's answer and the appellants' brief, Paper No. 19, and supplemental brief,

¹ The rejection of claim 10 was not maintained in the examiner's answer mailed September 16, 2002, Paper No. 24. The examiner has indicated that claim 10 is allowed in the office action dated Dec. 4, 2001, Paper No. 20, page 2.

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Paper No. 23, for a complete exposition of the positions advanced by the appellants and the examiner.

According to appellants, the invention relates to an electrophoretic display comprising at least one capsule, the capsule including one or more particles and a suspending fluid, and at least two electrodes adjacent the capsule.
(Supplemental Brief, page 3.)

Appellants state that claims 1, 2, and 6 stand or fall together, that claims 5, 8, and 9 stand together, that claim 3 stands alone, and that claims 4 and 7 stand together.
(Supplemental Brief, page 5.) Accordingly, we select one claim from each group and decide this appeal based on claims 1, 3, 4, and 5. See 37 CFR § 1.192(c)(7)(2001).

Claim 1 is illustrative of the claims on appeal:

1. An electrophoretic display comprising:
 - at least one capsule containing a suspending fluid and at least a first particle and a second particle, said first particle having a first optical property and a first electrophoretic mobility and said second particle having a second optical property and a second electrophoretic mobility; and
 - at least two electrodes disposed adjacent said capsule; wherein application of an electric field to said capsule by said electrodes causes said capsule to change visual state responsive to the optical properties and electrophoretic mobilities of said particles.

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The examiner has relied on the following references as support for the rejections on appeal:

Ota (Ota '693)	3,756,693	September 4, 1973
Ota et al. (Ota '517)	3,870,517	March 11, 1975
Saxe et al. (Saxe)	5,650,872	July 22, 1997
Naoyuki et al. (Naoyuki) (Japanese Laid-open application) ²	64-86116	March 30, 1989

Appealed claims 1, 2, and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Ota '693, Naoyuki, and Saxe (Answer, page 3). Claims 3 through 5 and 7 through 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Ota '693, Naoyuki, and Ota '517. (*Id.*) We affirm all the rejections on appeal for the reasons stated below.

OPINION

We turn first to the rejection of claims 1, 2, and 6 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Ota '693, Naoyuki, and Saxe.

² We cite to the full English translation of this document, which was previously made of record.

Naoyuki discloses two glass substrates 1 each with electrodes 2 formed thereon and having microcapsules 3 interposed therebetween. The microcapsules 3 include electrophoretic particles 4 that are dispersed in a dispersion medium. Naoyuki contemplates using more than one electrophoretic particle within each microcapsule, stating that "numerous microcapsules . . . are filled with a dispersive system consisting of a colored dispersion medium in which are dispersed at least one type of electrophoretic particle with optical properties differing from said dispersion medium" (Naoyuki, page 3.) Naoyuki further teaches that enclosing electrophoretic particles in microcapsules prior to placing between the display electrodes is desirable relative to prior art electrophoretic displays where "coagulation of the electrophoretic particles and adhesion phenomena may cause display unevenness." Naoyuki, page 2, 5th paragraph. We find that Naoyuki teaches all of the claim limitations except providing a "first particle and a second particle" wherein the first and second particles have different electrophoretic mobilities.

Appellants argues that "Naoyuki merely mentions encapsulated particles but provides no enabling description of making or using the limitation of, 'at least one capsule containing a suspending fluid and at least [one] particle,' as set forth in Appellants' claims 1, 2, and 6."

(Supplemental Brief, page 8.) We disagree. Naoyuki, at page 3, last paragraph, teaches that the microcapsules may be prepared by interfacial polymerization, insolubilization reaction, phase separation, or interfacial precipitation. Thus, Naoyuki teaches at least four methods of making microcapsules containing a suspending fluid and at least one particle. Appellants further argue that Naoyuki does not enable encapsulating more than one particle within the microcapsule. (Appeal Brief, page 9.) Appellant's attorney states that:

Particles that differ in these properties typically have substantially different surface properties. Particles with different surface properties will have different interactions with the surface of a capsule. As a result, there can be no reasonable expectation that an encapsulation or capsule material suitable for encapsulating particles with one surface property will work to encapsulate particles with different surface properties. Moreover, there can be no reasonable expectation that the behavior of particles with different surface properties will be the same within a capsule as within an unencapsulated medium (e.g., such as the medium of Ota '693).

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(*Id.*) No evidence is presented to substantiate this theory for doubting the enablement of Naoyuki. See *In re Payne*, 606 F.2d 303, 314-315, 203 USPQ 245, 255-256 (CCPA 1979) ("Arguments of counsel unsupported by competent factual evidence of record are entitled to little weight. To successfully rebut the examiner's prima facie case of enablement, it was incumbent upon Payne to introduce affidavits or other factual evidence in support of his position" [internal citation omitted]). Moreover, "absolute predictability" is not necessary to support obviousness, and the references need only provide a reasonable expectation of success. *Yamanouchi Pharmaceutical Co., Ltd. v. Danbury Pharmacal, Inc.*, 231 F.3d 1339, 1343, 56 USPQ2d 1641, 1644 (Fed. Cir. 2000) (citing *In re Longi*, 759 F.2d 887, 896, 225 USPQ 645, 651-52 (Fed. Cir. 1985)). In the face of Naoyuki's teaching of specific methods of making microcapsules and the teaching of a "dispersive system consisting of a colored dispersion medium in which are dispersed at least one type of electrophoretic particle with optical properties differing from said dispersion medium," (Naoyuki, page 3), we find that this record supports a reasonable expectation of success.

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Ota '693 discloses an electrophoretic display device wherein electrophoretic particles are placed between electrodes. Ota '693 further teaches using two kinds of electrophoretic materials within the same cell that move in opposite directions and produce different colors in response to applied voltage. Figs. 3-4, paragraph bridging cols. 4-5. Ota '693 teaches a cell that does not use microcapsules and is similar to the prior art cells discussed in Naoyuki.

We find that a person of ordinary skill in the art would have recognized that including more than one kind of electrophoretic particle within the microcapsule of Naoyuki would allow for modulating the color of the cell using applied voltage as taught by Ota '693. Additionally, a person of ordinary skill in the art would have recognized that using microcapsules would be advantageous to the display taught by Ota '693 as it would prevent coagulation of the electrophoretic particles and adhesion phenomena that may cause display unevenness as taught in the background of Naoyuki. Since Ota '693 and Naoyuki alone render claims 1, 2, and 6 unpatentable under 35 U.S.C. § 103(a), discussion of Saxe is unnecessary to resolve the issues on appeal.

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Claims 3 through 5 and 7 through 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Ota '693, Naoyuki, and Ota '517. Appellants argue that neither Ota '693 nor Naoyuki teach the "mobility" limitation of claim 5, which is incorporated by reference to claim 1. (Supplemental brief, page 11.) Naoyuki states that "the electrophoretic particles in the dispersion medium are made to adhere to or be repelled from the transparent electrode plate side according to the polarity of said electrode plates" (Naoyuki, page 2, 4th paragraph.) We find that, based on at least the foregoing passage, the electrophoretic particles 4 of Naoyuki clearly meet the "mobility" limitation of claims 1 and 5.

Claim 4 depends from claim 1 and requires that the "suspending fluid is substantially transparent." Naoyuki teaches that the dispersion medium can be water, which is substantially transparent. (Naoyuki, page 3, 3d paragraph.) Because Naoyuki teaches this limitation, further discussion of Ota '693 and Ota '517 is unnecessary to resolve the obviousness of dependent claim 4.

Claim 3 depends from claim 1 and requires that the "capsule contains at least one red particle, at least one

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blue particle, and at least one green particle." We note in this regard that Naoyuki teaches:

In encapsulating the disperse systems in microcapsules in advance, it is possible to produce disperse systems with various display colors, and appropriately arrange microcapsules with these different display colors to configure a desired color display (Naoyuki, page 4.)

Naoyuki further teaches exemplary electrophoretic particles such as iron blue and phthalocyanine green. Naoyuki, page 2. We determine that the color arrangement of red, blue, and green (RGB) is a well known arrangement of primary colors, the blends of which can be used to define colors throughout the spectrum of available colors. A person of ordinary skill in the art would have found it obvious to utilize this well known combination of colors so as to produce various display colors in a system using multiple colored electrophoretic particles that is suggested by the combined teachings of Naoyuki and Ota '693. Accordingly, the decision of the examiner is affirmed.

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OTHER ISSUES

Should the claims in the present application be subject to further examination, the examiner and appellants should consider the patentability of the claimed subject matter with respect to obviousness-type double patenting in view of Jacobson et al. (Jacobson) U.S. Patent No. 5,961,804. The present claim 1 appears to differ from the claim 13 of Jacobson in that it is directed to an electrophoretic display while Jacobson's claims are directed to electrophoretic material. However, Naoyuki teaches that it was well known to incorporate microencapsulated electrophoretic material into an electrophoretic display having electrodes. Accordingly, in the event that the present claims are further examined, the appellant and examiner should consider this issue.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


CHARLES E. WARREN

CHARLES F. WARREN
Administrative Patent Judge

Thomas A. Waltz

THOMAS A. WALTZ
Administrative Patent Judge

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